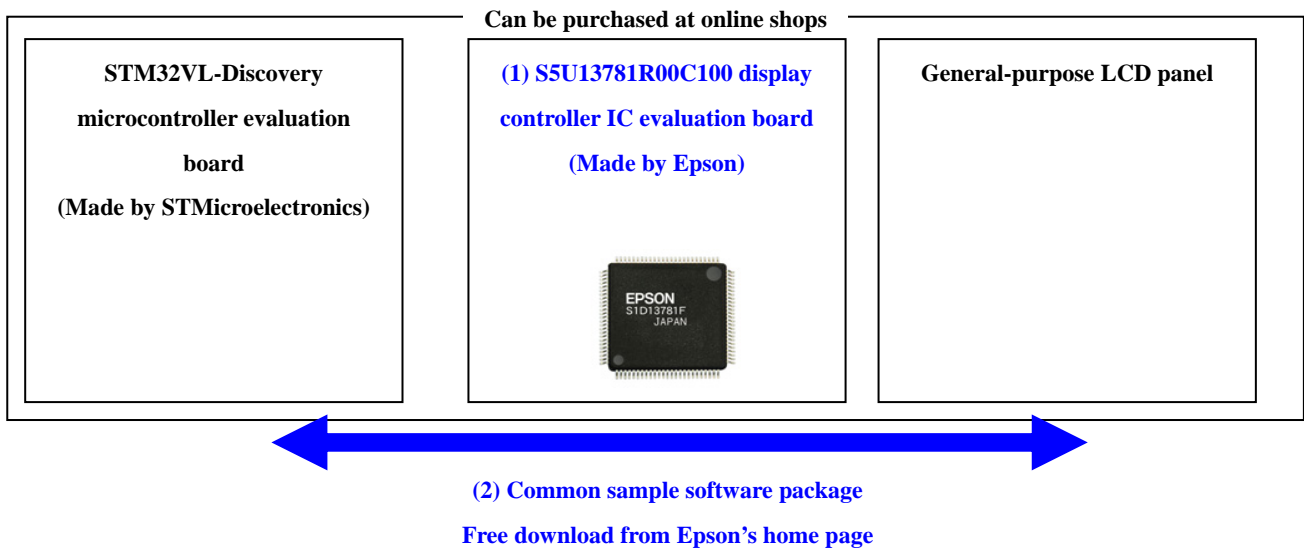**About the Display Controller IC Reference Design**

Epson's display controller IC reference design includes: 1) a display controller IC evaluation board, and 2) a common sample software package.
The reference design can be purchased at various online shops along with a microcontroller evaluation board and an LCD panel. Then by using the common sample software package downloaded for free from Epson's home page, customers can easily perform the evaluations needed to develop a product with an LCD panel.
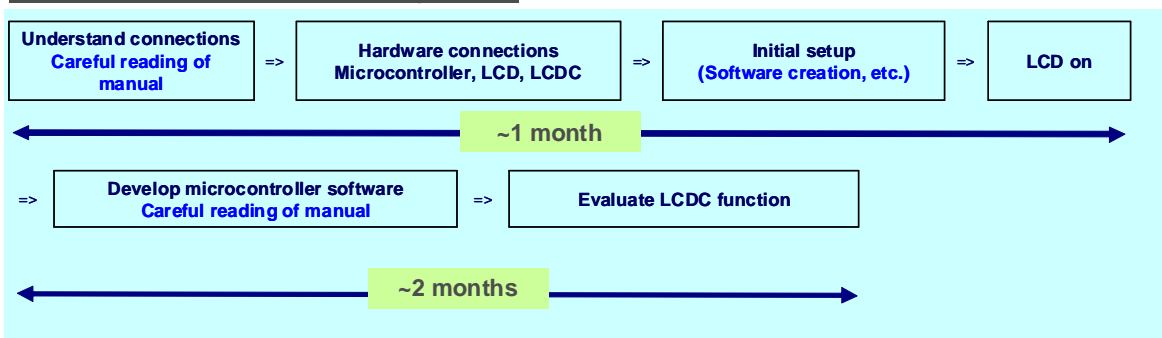
Performing evaluations using Epson's S5U13781R00C100 display controller IC evaluation board

**Can be purchased at online shops**

| STM32VL-Discovery microcontroller evaluation board (Made by STMicroelectronics) | **(1) S5U13781R00C100 display controller IC evaluation board (Made by Epson)** | General-purpose LCD panel |
| --- | --- | --- |

**(2) Common sample software package**
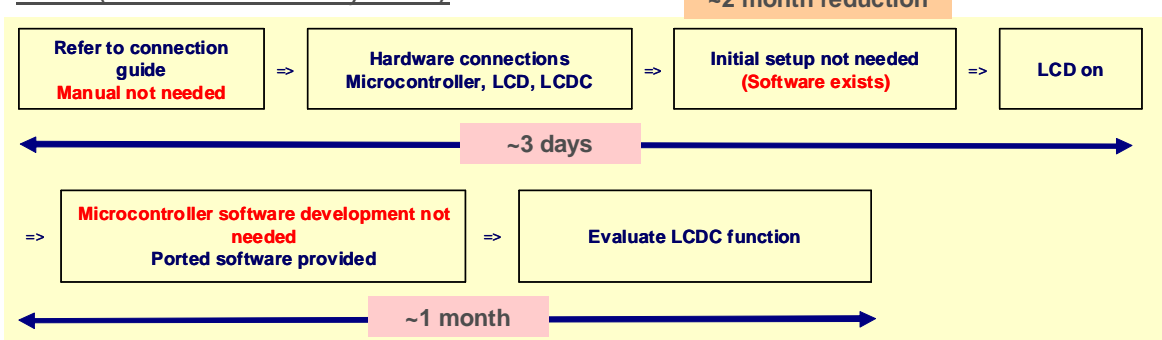
**Free download from Epson's home page**

Product website: http://www.epson.jp/device/semicon_e/product/lcd_controllers/

**Image of how using the reference design leads to shorter development time**

<u>Before (without reference system)</u>

| Understand connections **Careful reading of manual** | => | Hardware connections Microcontroller, LCD, LCDC | => | Initial setup (Software creation, etc.) | => | LCD on |

← ~1 month →

| => | Develop microcontroller software **Careful reading of manual** | => | Evaluate LCDC function |

← ~2 months →

<u>After (with reference system)</u>

~2 month reduction

| Refer to connection guide **Manual not needed** | => | Hardware connections Microcontroller, LCD, LCDC | => | Initial setup not needed (Software exists) | => | LCD on |

← ~3 days →

| => | Microcontroller software development not needed **Ported software provided** | => | Evaluate LCDC function |

← ~1 month →

See the attachment for an outline of the reference design specifications.

**Specifications**

Main specifications of S5U13781R00C100 display controller IC (S1D13781) evaluation board

| Product number | S5U13781R00C100 |
|---|---|
| Contents supplied | Board |
| Included display controller IC | S1D13781 (QFP15-100 pin: 0.5 mm pitch) |
| Supply voltage | Single 3.3V ±0.3V |
| Clock | 24 MHz Epson Toyocom crystal oscillator included |
| Connection to microcontroller evaluation board | 8/16-bit parallel bus and serial (SPI) |
| Connection to LCD panel | 0.5 mm pitch 55 pin FPC connector and 2.54 mm pitch conversion board included |

| | |
|---|---|
| LCD panel backlight power source | White LED driver included<br>(Max. 38V/60 mA with 5V input) |
| Flash memory for image data storage | 16 Mbit SPI Flash included |
| Dimensions | 70 x 60 mm |

*Specifications are subject to change without notice.